03004.5 Page 1 of 7

12-4-01 #45

12-4-01 12-4-01 10

RAW SEQUENCE LISTING DATE: 12/04/2001 PATENT APPLICATION: US/09/855,612A TIME: 17:55:19

Input Set: N:\Crf3\RULE60\09855612A.RAW
Output Set: N:\CRF3\12042001\1855612A.raw

```
1 <110> APPLICANT: SPIES, THOMAS
        SPIES, VERONIKA
 3 <120> TITLE OF INVENTION: CELL STRESS REGULATED HUMAN MHC CLASS I GENE
 4 <130> FILE REFERENCE: FHCC:003WO
 5 <140> CURRENT APPLICATION NUMBER: 09/855,612A
 6 <141> CURRENT FILING DATE: 2001-05-14
 7 <150> PRIOR APPLICATION NUMBER: US/09/303,161
 8 <151> PRIOR FILING DATE: 1999-04-29
                                                          ENTERED
 9 <150> PRIOR APPLICATION NUMBER: PCT/US97/29179
10 <151> PRIOR FILING DATE: 1997-10-29
11 <150> PRIOR APPLICATION NUMBER: USAN60/029,044
12 <151> PRIOR FILING DATE: 1996-10-29
13 <160> NUMBER OF SEQ ID NOS: 16
14 <170> SOFTWARE: PatentIn Ver. 2.1
16 <210> SEQ ID NO: 1
17 <211> LENGTH: 11722
18 <212> TYPE: DNA
19 <213> ORGANISM: Homo Sapiens
20 <400> SEQUENCE: 1
         cactgettga geogetgaga gggtggegae gteggggeea tggggetggg eeeggtette 60
21
         ctgcttctgg ctggcatctt cccttttgca cctccgggag ctgctgctgg tgagtggcgt 120
22
         tectggeggt ceteggegga gegggageag tgggaegttt ceggggggteg ggtgggtage 180
23
         ggcgagcgct gtgcggtcag ggcggggctc ctgtgccctg tcggtggcgc agggagctgg 240
24
25
         acgeggeeeg ttacegeeae actteageee tgetteeeeg teacttttea gteeteeteg 300
26
         ggategegea teacetgeae tttetggtet eeteetgete ttteteteet egegteteet 360
27
         cegetteete teaetttteg gacaaaceag teettetgag geceatgggt teeegggetg 420
         cctccggggc tgctcctgtg aatggcattc gagtgccctt ccagcgcggc cactgaagca 480
28
29
         qccacaaccc ccqqtqctcq qqqcqqctct caqqtccctq aaqtcctqtc ctctcccqqa 540
30
         geegaegtgt teteagetee tgggeegeag eteetggagt aggggeeete ettteteggg 600
31
         acceggaget ggtgetteet getgetgtgg ggaetgtggg gggteetgae teteaagetg 660
         aggggttgga gtetgeagge teegggeaga ggattettee tgegaettet eteateeeca 720
32
33
         geteattete ecetegeete tggeteegag ggteetetee teteteteat eecaceeeta 780
         ctaatgacca gtgatctaag gacaccagat teeeteteae eteeteeetg eecateteag 840
34
         ggcccgctga gtccttttgc cctcccagct ccctgctacc ccttcctgtg tgctgttctc 900
35
36
         tgatecattt ctagggtgte etetgeeete ateceetgte eeegeeaceg aagteeetee 960
37
         tgcacccctt atgggccttt cctacaagca gccttcaccc agtgctgccc ctatgcctcc 1020
38
         ccgttcccaa atgtccctga ctctaacttt ctggtqctqc cttttatccg ggggggtctt 1080
39
         ccctccatcc cactcccctc cagaccccca aggggaaccc tgatgctaat ggcagttggg 1140
40
         cettaggeag ggegeaggge agegeagatg ecceeteece tecagtgeag atgeetgtte 1200
41
         tggaccetge cteattgtgg eccetteece acteetteat ceteageete accetettga 1260
42
         ggaccccacc ctccagccca caggtgctgg accatccctc cctggtccct ccgcccctct 1320
43
         ccaccttggg accttgtgct gctcctatct cttgcccaqc tgccttgggc cctcagcacg 1380
44
         ttctcatctt tcagtgggaa agtgggagtg ctggagcata tgacagtgct gagcatcttt 1440
45
         eccaageece acceteceee agageaceet ecceteetgt ceteaceeta ecceaagtte 1500
46
         teceaeagte aetectgeee catgeteatg eegeceteea gttettgete tgeeeatete 1560
47
         ccctccccaa cccagaccta aaacaggctg ttgggccaac tgttccttga ccttccttct 1620
         tttcttttgg ttccttgacc ccagtgggct ctcactcccc acaccgcata tctaaaatct 1680
48
```



RAW SEQUENCE LISTING DATE: 12/04/2001 PATENT APPLICATION: US/09/855,612A TIME: 17:55:19

Input Set : N:\Crf3\RULE60\09855612A.RAW
Output Set: N:\CRF3\12042001\1855612A.raw

49 gttttgcctg ctcttggggt gccactgctc cccctccagc attactcctt ttggcaggtc 1740 50 cttcctcagg ctgagaatct ccccctctac cttggttttc tctctctggc cagcacccc 1800 actccttgct ttgtttttaa tttttaactt ttgtttgggt acgtagtaga tatatatgta 1860 51 52 tatatttatq qqqtacatqq qatattttqa cacaqqccta caatatqtaa taatcacatc 1920 53 agggtaaatg ggttatatca caacaagcat ttatcctttc tttgtgctac aaacaatccc 1980 54 attatgetet tteagttatt tttaaatgta caataaatta ttgttgactg tacteaccet 2040 gctgtgctat ctactagatc ttattcattc taattatatt tttgtaccca ttattaacca 2100 55 tecetgetee eccaetecee actaecette teageetetg gtaateatea ttetattgte 2160 56 57 tctccccatg aggtccattg ttttaaattt tggctgccac aaataagtga gaacatgcaa 2220 agtttgtctg tctgggcctg gggcttattt cacttcacag gatgacctcc agttctttgc 2280 58 59 aaatqacacg atggctqaat agttctccac atacacatgt acaccacatt ttctttatcc 2340 atgcgtctgt tgatggacac ttagattgct tgcagatctt ggctactttg aatagtgctg 2400 60 caataaacat ggaaaagtaq atagctcttt aatataccga tttcctttct ttggagtata 2460 61 tgcctaacag tgggaqtqct ggaqcatatq acaqctctat tgtattttta gtttttggaa 2520 62 quacetecae attgttteee ataqtqqttq tactaqttta egtteeeace aacaqtqtae 2580 63 64 atcctcacca gcattcctta tttctacatc ctcgccagca ttccttattg cctgtcttct 2640 ggataaaagc cagtttatct ggggtgggat gttatctcgt aggagttttg atttgccttc 2700 65 66 atctqttqac qaatqatqtt qaqcaccttt tcatatacct qtttqccatt tatatqtctt 2760 cttttgagaa atgactattc agatcttttc tcatttttaa attggattat tatatttttt 2820 67 68 ttcctatagt tgttcgagct ccttatatgt ttcagttact gatcctttgt cagatgaata 2880 69 gtttgaaaat attttctccc attcttggat ggtctcttca ttttgtttat tgtttccttt 2940 70 gctqtgcaga agccttttta cttgatatga tcccatttat gcaattttac tttggttacc 3000 71 tgtgcttgtg gggtattact ttaaaaatct ttgcccagtc caatatccta gagagtttcc 3060 ccaatgtttt cttgtatagt ttcatagttt gaggtcatag atttacatct ttaatccact 3120 72 73 ttgatttgat ttttgtatat ggtgaaagac agggtctagt ttcattcttc tgcataagga 3180 74 tatctagttt ccccagcacc atttttgaag agactctcct ttgccaatgt gtgttcttgg 3240 75 tacctttgtt ggaaatgagt ttactgtaga tgtatggaat tgtttctggg ttctctattc 3300 76 tgtttcattg gtctgtgtgt ctgtttttat gccagtatca tgctgttttg gttactgtag 3360 77 ctctgtagta taatttgaag tcagataatg tgattcctct agttttgttc attttgctca 3420 78 ggatagettt atetattetg gtttttttgt ggtteeatat geattttagg attattttta 3480 79 ttatttctgt gaagaatgtc attagtgttt tgatagggat tgcattgaat ctgtagatta 3540 80 ctttgggtag tatggatatt tcaacaaaac tgattcttcc aatccatgaa cgtggactat 3600 81 cttttccatt ttttgtgtcc ttcaattttt tgcatcagtg ttttttgttt ttggtttttg 3660 82 agatggagtt tcactcttgt tgcccaggct agaatgcaag ggtgtgatct tggctcaccg 3720 83 caaceteege eteceaggtt caagetatte ttetgeetea geeteecaag tagetgggat 3780 tacaggcatg tgccactgtg cctqqctaat tttctatttt tattagagat ggggtttctc 3840 84 85 tatgttggcc aggctagtct tgaactcctg acctcaggtg atccacctgc ctcggcctcc 3900 caaagtgctg ggattacagg catgagccac cacgcccagc cacatcactg ttttatagtt 3960 86 87 88 tgtagctatt gtaaatggga ttcgtttctt gatttctttt tcagattatt tgctgttagc 4080 89 actgattttt gcatgttgat tttgtatcct gcaactttac tgaatttgtt cttcagttct 4140 90 aatggttttt tggtggagtc tttaggtttt tccaaatatc agaccacatg atctgcaaac 4200 aaggataatt tgacttotto ttttocagtt ttaatgooot ttotttottt otootgtotg 4260 91 92 attgctctag ttaggatctg cagtactgtg ttgcataact gtggtaaaat tagtcatcct 4320 93 tgtcttattc cagatcttag agaaaagget ttcagttttc ccccattcag tatgttacta 4380 94 gctgtgagtt tgtcatatat ggcttttatt atattgaggt ctgttccttg tatacttagt 4440 95 tttttgagag tttttatcat gaagggatgt tgaatttatc aaatgctttt tcagtatcaa 4500 96 ttgaatgata ctqqcttttg tcctttattc tgttgatatg acqtattaca ttgattgatt 4560 97 tgtgtatgtt aaatcatcct tgcatacctg gaatacattc cacttgctca taaagaatga 4620



DATE: 12/04/2001 TIME: 17:55:19

Input Set : N:\Crf3\RULE60\09855612A.RAW
Output Set: N:\CRF3\12042001\1855612A.raw

PATENT APPLICATION: US/09/855,612A

98 tottttttaa tqtattqttq aatgtqqttt qctaqtattt ccttqacqat ttttqcatcq 4680 99 gtgttcatca gggatatagg cctgtagttt tcttttttat gatgtgtctt tgcctggttt 4740 100 ttgtatcagg atattcctgg ctttgtaaaa tgagtttgga agtattccct cctcctctat 4800 ttttcagaac agtttgaata ggactgacat atgttgttct ttaaaagttt aattgtggta 4860 101 102 aattatacat tacataaatt ttactqtttt aaccactttt aagtqtatac tcggtggcat 4920 103 tagatacatt cacatttttg tgcaacccaa aactctgtgc ccattaatcg gtaactcccc 4980 104 attecteect acctetggce cetggtaace accattetac tttttgttte tatgaatttg 5040 105 accactctag gtacctcatt taagcagaat catgtaatgt ttgtcttttt gtttctggct 5100 106 tatttcactt ataatatttt tgaggttcgg tgggcacagt ggctcacgcc tggatttcca 5160 107 gcactttggg aggctgaagc aggtggatca cctgagtttc ggagttcgaa accagcctgg 5220 ccaacatggt gaaaccccat ctctactaaa aataataaaa gttagccggg cgtgatggcg 5280 108 109 ggtgcctgta atcccaacta cttgggaggc tgaggcagga gaatcgcttg aatccgggaa 5340 110 gtggaggttg cagtgagctg agatcaggcc actgcactcc agcctgggca acaagagtga 5400 111 aattccatct ccaaaaaaaa aaaataaaac aataataata ataatatttt tgaggttcat 5460 112 ccaagttgta gtatgggtca gaatttcatt ccttttaagg atggataata ctcattatat 5520 gtatgtacca catcttggtt atccatcct cagacaatgg acacttgggt tacttctacc 5580 113 114 ttttggatat tggcaaatat ttcatttcct ttgggtatat atttatttcc tttgggtatt 5640 115 tettttgggt atatateeag aaatagaage agtacaeagg ggetteattt tetetgtete 5700 116 tttqccaacc ttqctctqtq tqtqtqta tqtqtqtqtq taqqtqtqtq ataacagcca 5760 117 tectgattgg tttcaggtgg cateteattg tggtttggat ttgcatttte ctaatgagtg 5820 ctgatattga gcatcttttc atgtgtttgt tgatcatttg taattttctt tgaagaattg 5880 118 119 gccatttaag tettttgece atttttteee ceacataget tetettatea gatatatgae 5940 ttgcaatatt tatttcattt cggggttgat tgctttttca ctctgattgt gccctttgat 6000 120 121 gcatagatgt titgaatitt catcagteta cittgtcagt tetitetatt etatetgtge 6060 tttggtgtca tatccatgaa agcactgtca aatcctatgt catgaacatt atccccaatg 6120 122 123 tttgcttcta agaaattttt aggttttagt tcttgagtgt agagtttagg tctttgattc 6180 124 attttgagtt aatttttgta tatagtgcaa attaagggtc caattttatt ttaacacccc 6240 125 etgececcag aactatttge tgaaaagate aactgaetet ttgteaeetg eteaeeccag 6300 126 tggacactag ctgttccatc caattgctgt cctggggcct tgtcatgcta ctcttccact 6360 127 ttgaacccaa geccacaceg ttegttgete eeetetggga tactgaceee actataaact 6420 128 tetetgggge tacaacette etaceetttg tgeeteatga ceaeeecete eettgteeee 6480 129 gccatgccca tgatgagtct cttctcgagg cagctccct tgcctccatc tcaccctcag 6540 130 cctatgcacc acagccacac tggacatggg tccctctgag cctgagtccc ttcccattcc 6600 131 caccatetee tetggeaaga cetteettee accacettea tgeteeteee ttgeeeetge 6660 132 agggcagcct ctccccttgg cccctattcc cttagggggc ttgtggccac ccagtccttg 6720 133 cacctggcct acaagtttgc catcttcatt ccccttctt ctgttcatca gccccctcct 6780 134 ctatectece acceteacag tittetitgt atatgaaate etegtietig teeetitgee 6840 135 cgtgtgcatt tcctgcccca ggaaggttqg gacagcagac ctgtgtgtta aacatcaatg 6900 136 tgaagttact teeaggaaga agttteacet gtgattteet etteeceaga geeceaeagt 6960 137 cttcgttata acctcacggt gctgtcctgg gatggatctg tgcagtcagg gtttcttgct 7020 138 gaggtacatc tggatggtca gcccttcctg cgctatgaca ggcagaaatg cagggcaaag 7080 139 ccccagggac agtgggcaga agatgtcctg ggaaataaga catgggacag agagaccagg 7140 140 gacttgacag ggaacggaaa ggacctcagg atgaccctgg ctcatatcaa ggaccagaaa 7200 141 gaaggtgaga gtcggcaggg gcaagagtga ctggagaggc cttttccaga aaagttaggg 7260 142 gcagagagca gggacctgtc tcttcccact ggatctggct caggctgggg gtgaggaatg 7320 143 ggggtcagtg gaactcagca gggaggtgag ccggcactca gcccacacag ggaggcatgg 7380 144 gggagggcca gggaggcgta ccccctgggc tgagttcctc acttgggtgg aaaggtgatg 7440 145 ggttcgggaa tggagaagtc actgctgggt gggggcaggc ttgcattccc tccaggagat 7500 146 tagggtctgt gagatccatg aagacaacag caccaggagc tcccagcatt tctactacga 7560



RAW SEQUENCE LISTING DATE: 12/04/2001 PATENT APPLICATION: US/09/855,612A TIME: 17:55:19

Input Set : N:\Crf3\RULE60\09855612A.RAW
Output Set: N:\CRF3\12042001\1855612A.raw

147						cccagtcctc	
148						ccatgaagac	
149	caagacacac	tatcacgcta	tgcatgcaga	ctgcctgcag	gaactacggc	gatatctaga	7740
150	atccagcgta	gtcctgagga	gaagaggtac	ggacgctggc	caggggctct	cctctccctc	7800
151	caattctgct	agagttgcct	cacctccaag	atgtgtccag	ggaaaccctc	cctgtgctat	7860
152	ggatgaaggc	atttcctgtt	ggcacatcgt	gtcctgattt	tcctctattg	ttagagccac	7920
153						gcaagtagag	
154	gaccctccga	cagaatcctg	agcctgtggt	gggtgtcagg	caggagagga	agccttcagg	8040
155	gccagggctg	cccctctgc	ctcccagcct	gcccatcctg	gagagttccc	tcctggcccc	8100
156	acaacccagg	agtccacccc	tgacatcccc	ctcctcagca	tcaatgtggg	gatcccagag	8160
157	cctgaggcca	cagtcccaag	gcccatcctc	ctgccagcct	ggaagaactg	ggccccagag	8220
158	tgaggacaga	cttgcaggtc	aggggtcccg	gagggcttca	gccagagtga	gaacagtgaa	8280
159	gagaaacagc	cctgttcctc	tcccctcctt	agaggggagc	agggcttcac	tggctctgcc	8340
160	ctttcttctc	cagtgccccc	catggtgaat	gtcacccgca	gcgaggcctc	agagggcaac	8400
161	atcaccgtga	catgcagggc	ttccagcttc	tatccccgga	atatcacact	gacctggcgt	8460
162	caggatgggg	tatctttgag	ccacgacacc	cagcagtggg	gggatgtcct	gcctgatggg	8520
163	aatggaacct	accagacctg	ggtggccacc	aggatttgcc	aaggagagga	gcagaggttc	8580
164						tggtgagcct	
165	agggtgaccc	tggagagggt	caggccaggg	tagggacagc	agggatggct	gtggctctct	8700
166						gagtcattgg	
167						tattattatt	
168						tgagaaaagc	
169						cattgctcct	
170						tggggaattt	
171						agcgagggtc	
172						ggagggctgc	
173						ggcgcatcca	
174						acggcctcag	
175						agaggaatct	
176						tttctccagc	
177						ctgcctgtgt	
178						atctctgtcc	
179						tgtcctctgc	
180						gtttcttgca	
181						ggggcccagc	
182						ttcttctcca	
183						gtgctctgtg	
184						gcctggtaag	
185						atgggggatg	
186						ggcgacagta	
187						ctcatccttg	
188						tttgtcccct	
189	_					gcaggtctgt	
190						ctggttccct	
191						gagtatgaag	
192						aagatattcg	
193						tattatatga	
194						cataatttca	
195						aacaggaact	
	,						

RAW SEQUENCE LISTING DATE: 12/04/2001 PATENT APPLICATION: US/09/855,612A TIME: 17:55:19

Input Set : N:\Crf3\RULE60\09855612A.RAW
Output Set: N:\CRF3\12042001\1855612A.raw

196		caaa	attt	gga g	gece	cctc	tc c	agga	ggtt	c tgi	tgtg	gaga	tggt	tggct	tgt	ggca	gtggca	10560
197		gtt	ccca	ggt 🤉	gcaga	agggi	tg g	gcaga	aggca	a gc	ctcag	ggct	aag	gggt	ctc	cccta	actcca	10620
198		cate	ggaga	aaa a	atcc	cttgi	ta g	gttg	caag	g gca	agtg	gccg	ggt	ggaat	tcc	ctgct	aggga	10680
199		caga	agcag	gga a	aggc	ctcg	ca g	cctca	accaa	a gca	agcag	gece	tgg	ggtg	gag	ctgc	tttcc	10740
200		agg	gttaa	agc o	ggac	caggo	ca g	gagta	agcg	g tta	actca	aaga	gcag	ggtca	aca	ggcti	gggtt	10800
201		gtga	agggi	tca o	ggaga	aggc	ca g	gcct	cctc	g age	caage	gtgg	ggg	tccca	agg	gtca	gtcag	10860
202																	gcttc	
203			_			_		_					-			_	ctgage	
204																	cctctg	
205																	gcctc	
206		_					_								_		gtcttg	
207																	cacggg	
208				-						-	_						ggagg	
209																	gagcaa	
210		-		_						_	-						-	
																	ttacc	
211							-			-	-			-			agttgg	
212				_			_		_		_	_		_	-	_	cttgg	
213																	aattcc	
214		_		-		_							-		-		gaaaca	
215									gttg	t tg	gaggo	ctgc	aaaa	atgti	tag	tagai	atgag	
216		-	tttg	-		gccai	ta t	t										11722
	<210>				2													
_	<211>																	
220	<212>	TYP	E: PI	RT														•
	<213>				omo S	Sapi	ens											
222	<400>	SEQ	JENCI	E: 2														
223		Met	Gly	Leu	Gly	Pro	Val	Phe	Leu	Leu	Leu	Ala	Gly	Ile	Phe	Pro	Phe	
224		1				5					10					15		
225		Ala	Pro	Pro	Gly	Ala	Ala	Ala	Glu	Pro	His	Ser	Leu	Arg	Tyr	Asn	Leu	
226					20					25					30			
227		Thr	Val	Leu	Ser	Trp	Asp	Gly	Ser	Val	Gln	Ser	Gly	Phe	Leu	Ala	Glu	
228				35		_	_	_	40				_	45				
229	•	Val	His	Leu	Asp	Gly	Gln	Pro	Phe	Leu	Arq	Tyr	Asp	Arq	Gln	Lys	Cvs	
230			50			-		55			,	-	60	_		4	- 4 -	
231		Ara	Ala	Lvs	Pro	Gln	Glv	Gln	Trp	Ala	Glu	Asp	Val	Leu	Glv	Asn	Lvs	
232		65		-1-		0	70	U				75	,		0_1		80	
233			Trn	Δsn	Δrα	Glu		Δra	Asn	T.e.11	Thr		Δsn	Glv	T.ve	Asp		
234		1111	115	изъ	Arg	85	1111	nrg	изр	Leu	90	GLY	NSII	GLY	цуз	95	Deu	
235		λνα	Mo+	Thr	T 011		Uic	Tlo	Tazo	A cn		Two	Clu	C117	T 011	His	Cor	
		AIG	Met	1111		АТа	птэ	116	пуъ	_	GIII	пуз	GIU	GIY			per	
236		T	01 =	a1	100	3	37- 1	G	a 1	105	***	a 1	3	3	110		3	
237		ьeu	GIN		тте	Arg	val	Cys		тте	HIS	GIU	ASP		ser	Thr	Arg	
238		•	~ ·	115	•	D1			120	۵,	۵.		-1	125	~	a :		
239		ser		GIn	His	Pne	Tyr		Asp	GLY	GLu	Leu		Leu	ser	Gln	Asn	
240			130	_,			_	135		_		_	140	_			_,	
241			Glu	Thr	Glu	Glu		Thr	Val	Pro	Gln		Ser	Arg	Ala	Gln		
242	•	145					150					155					160	
243		Leu	Ala	Met	Asn		Arg	Asn	Phe	Leu	Lys	Glu	Asp	Ala	Met	Lys	Thr	
244						165					170					175		
245		T	m la	77.2 -	m	TT ! _	3 7 -	31-1	** -	3 7 -	3	O	T	01 -	a 1	T	3	

Lys Thr His Tyr His Ala Met His Ala Asp Cys Leu Gln Glu Leu Arg

245

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/855,612A

DATE: 12/04/2001 TIME: 17:55:20

Input Set : N:\Crf3\RULE60\09855612A.RAW
Output Set: N:\CRF3\12042001\1855612A.raw